

State of Colorado
Energy & Carbon Management Commission1120 Lincoln Street, Suite 801, Denver, Colorado 80203
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Report taken by:

Krystal Heibel

Site Investigation and Remediation Workplan (Supplemental Form)

This form shall be submitted to the Director for approval prior to the initiation of site investigation and remediation activities. However, this shall not preclude the Operator from taking immediate action to protect public health or safety, the environment, wildlife, or livestock.

This Form 27 describes site conditions as currently understood by the Operator; approval of this Form 27 by ECMC is based on the site conditions accurately described herein; any changes in site conditions identified during or subsequent to the performance of the approved workplan may necessitate additional investigation or remediation which shall be described on a supplemental Form 27. This Form 27 is intended to provide basic information regarding the proposed site investigation and remediation actions, but the workplan may be more fully described in attached documentation.

Closure request is not available for an Initial Site Investigation and Remediation Workplan.

OPERATOR INFORMATION

Name of Operator: PEASE OIL & GAS COMPANY	Operator No: 68050	Phone Numbers
Address: 751 HORIZON CT, STE 203		Phone: (303) 894-2100
City: GRAND JUNCTION	State: CO	Zip: 81506
Contact Person: James Hix - East OWP EPS	Email: james.hix@state.co.us	Mobile: (303) 905-5341

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 34966 Initial Form 27 Document #: 403744846

PURPOSE INFORMATION

- ☒ Rule 913.c.(1): Pit or Cuttings Trench closure.
- ☐ Rule 913.c.(2): Buried or partially buried vessel closure, which will be by removal.
- ☒ Rule 913.c.(3): Remediation of Spill and Releases pursuant to Rule 912.
- ☐ Rule 913.c.(4): Land treatment of Oily Waste pursuant to Rule 905.e.
- ☐ Rule 913.c.(5): Closure of Centralized E&P Waste Management Facilities pursuant to Rule 907.h.
- ☐ Rule 913.c.(6): Remediation of impacted Groundwater pursuant to Rule 915.e.(3).D, and the contaminant concentrations in Table 915-1.
- ☐ Rule 913.c.(7): Investigation and remediation of natural gas in soil or Groundwater.
- ☐ Rule 913.c.(8): When requested by the Director due to any potential risk to soil, Groundwater, or surface water.
- ☐ Rule 913.c.(9): Decommissioning of Oil and Gas Facilities.
- ☐ Rule 913.g: Changes of Operator.
- ☐ Rule 915.b: Request to leave elevated inorganics in situ.
- ☐ Other: _____

SITE INFORMATION

Yes Multiple Facilities

Facility Type: PIT	Facility ID: 116299	API #: _____	County Name: LOGAN
Facility Name: WHITTIER "A"	Latitude: 40.743977	Longitude: -103.293248	
** correct Lat/Long if needed: Latitude: 40.742434		Longitude: -103.292520	
QtrQtr: NWNE	Sec: 21	Twp: 9N	Range: 53W Meridian: 6 Sensitive Area? No

Facility Type: LOCATION	Facility ID: 388480	API #: _____	County Name: LOGAN
Facility Name: WHITTIER-69N53W 21NWNE (OWP)	Latitude: 40.743067	Longitude: -103.292138	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NWNE	Sec: 21	Twp: 9N	Range: 53W Meridian: 6 Sensitive Area? No

SITE CONDITIONS

General soil type - USCS Classifications CL

Most Sensitive Adjacent Land Use Cropland

Is domestic water well within 1/4 mile? No

Is surface water within 1/4 mile? No

Is groundwater less than 20 feet below ground surface? No

Other Potential Receptors within 1/4 mile

No DWR permitted domestic water wells within 1/4-mile. On-location NOI = Permit #40000991-MH (ECMC) submitted. Proposed depth = 10 ft bgs. Surface Waters: No surface waters w/in 1/4-mile of the location. There is a drainage swale ~550 ft NW of the former pit which historically received produced water. No NWI mapped wetlands within 1/4-mile. Location is 1230 ft south of State Wildlife Area, and is located within CPW Mapped HPH: Mule Deer Winter Concentration Area. Point of Rocks Reservoir ~1 mile northwest

SITE INVESTIGATION PLAN

TYPE OF WASTE:

- ☒ E&P Waste ☒ Other E&P Waste ☐ Non-E&P Waste
- ☒ Produced Water ☐ Workover Fluids
- ☒ Oil ☐ Tank Bottoms
- ☐ Condensate ☐ Pigging Waste
- ☐ Drilling Fluids ☐ Rig Wash
- ☐ Drill Cuttings ☐ Spent Filters
- ☒ Pit Bottoms
- ☐ Other (as described by EPA)

DESCRIPTION OF IMPACT

Impacted?	Impacted Media	Extent of Impact	How Determined
UNDETERMINED	GROUNDWATER	UNKNOWN	VISUALLY, FIELD SCREENING, ANALYTICAL
UNDETERMINED	SOILS	UNKNOWN	VISUALLY, FIELD SCREENING, ANALYTICAL

INITIAL ACTION SUMMARY

Description of initial action or emergency response measures take to abate, investigate, and/or remediate impacts associated with E&P Waste.

The PEASE OIL & GAS COMPANY - 68050 WHITTIER "A" PIT (Pit # 116299) oil and gas Location (Location ID #388480) is in the Colorado ECMC (f.k.a. Colorado Oil and Gas Conservation Commission "COGCC") Orphaned Well Program (OWP). This initial Form 27 is submitted for site investigation activities to investigate for evidence of E&P Waste impacts. A subsurface investigation will be performed in accordance with Colorado ECMC 900 Series Rules. Soil borings will be advanced within the footprint of the suspected pit, as well as downgradient of the former pit location in the drainage swale northwest of the pit. Soil samples will be submitted to an accredited environmental laboratory for analysis of Table 915-1 parameters.

PROPOSED SAMPLING PLAN

Proposed Soil Sampling

- ☒ Will soil samples be collected as part of this investigation? (Number, type (grab/composite), analyses, and locations of samples):

Grab soil samples will be collected from areas most likely to exhibit E&P Waste impacts. Soil samples will be submitted for analysis of Table 915-1 parameters including organic compounds (TPH ranges C6-C36; BTEX; 1,2,4-Trimethylbenzene, 1,3,5-Trimethylbenzene, Naphthalene, PAH) and inorganic compounds (metals, soil suitability for reclamation).

Proposed Groundwater Sampling

- ☒ Will groundwater samples be collected as part of this investigation? (Number, analyses, and locations of samples):

If encountered in sufficient quantity to enable sample collection, a grab groundwater sample or samples will be collected and submitted for analysis of organic compounds (BTEX; Naphthalene; 1,2,4-Trimethylbenzene; 1,3,5-Trimethylbenzene) and inorganic parameters (total dissolved solids (TDS), chloride ion, sulfate ion). Soil borings will be completed as temporary groundwater monitoring wells.

Proposed Surface Water Sampling

- ☐ Will surface water samples be collected as part of this investigation? (Number, analyses, and locations of samples):

Surface water samples are not expected to be collected as part of this investigation.

Additional Investigative Actions

- ☐ Additional alternative investigative actions described in attached Site Investigation Plan (summary):

No additional alternative investigative actions are expected to be conducted as part of this site investigation.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 24

Number of soil samples exceeding 915-1 23

Was the areal and vertical extent of soil contamination delineated? No

Approximate areal extent (square feet) 51980
0**Groundwater**

Number of groundwater samples collected 0

Was extent of groundwater contaminated delineated? No

Depth to groundwater (below ground surface, in feet)

Number of groundwater monitoring wells installed

Number of groundwater samples exceeding 915-1

Surface Water

0 Number of surface water samples collected

Number of surface water samples exceeding 915-1

If surface water is impacted, other agency notification may be required.

NA / ND

ND Highest concentration of TPH (mg/kg)

-- Highest concentration of SAR 178

BTEX > 915-1 No

Vertical Extent > 915-1 (in feet) 10

Highest concentration of Benzene (µg/l)

Highest concentration of Toluene (µg/l)

Highest concentration of Ethylbenzene (µg/l)

Highest concentration of Xylene (µg/l)

Highest concentration of Methane (mg/l)

OTHER INVESTIGATION INFORMATION☐ Were impacts to adjacent property or offsite impacts identified?☒ Were background samples collected as part of this site investigation?

Two background soil samples, BKG01 and BKG02, were collected as part of this site investigation. The background soil sample locations were collected from undisturbed areas north and south of the pit location and upgradient of the drainage swale. The background soil samples were collected at depths from 0 to 3 feet below ground surface (bgs).

☐ Was investigation derived waste (IDW) generated as part of this investigation?

Volume of solid waste (cubic yards)

Volume of liquid waste (barrels)

☒ Is further site investigation required?

Further site investigation is required. Inorganic parameters exceed Table 915-1 metals (arsenic, barium, lead, nickel, selenium) and soil suitability for reclamation parameters (pH, EC, SAR, and boron). Arsenic was reported above the residential soil screening level (SSL) of 0.68 mg/kg in both background soil samples. Barium and lead were reported above their respective Protection of Groundwater SSL.

REMEDIAL ACTION PLAN

Does this Supplemental Form 27A include changes to a previously approved Remedial Action Plan? No

SOURCE REMOVAL SUMMARY

Describe how source is to be removed.

This Form 27 presents a Subsurface Site Investigation Workplan for assessing E&P waste impacts resulting from operation of a former production pit and historic produced water discharge to an adjacent swale northwest of the pit. Source removal will depend on the results of this investigation and remediation will be performed under a separate scope of work.

REMEDIAL ACTION SUMMARY

Describe how remediation of existing impacts to soil and groundwater is to be accomplished (i.e. summarize remedial action plan). Provide a brief narrative description including: technical justification, schedule for implementation, estimated time to attain NFA status, plus plans and specifications for the selected remedial action technology.

If E&P Waste impacted soils and groundwater are encountered during the investigation, the OWP will remediate impacts to bring the location into compliance. The intent of this initial Form 27 Site Investigation and Remediation Workplan is to define the horizontal and vertical extent of the E&P Waste impacts. If the extent cannot be defined during this initial action, then additional site investigation and remediation will be performed at a later date under an approved supplemental Form 27. Site data will be evaluated and remediation technologies implemented to meet Table 915-1 soil residential screening levels, protection of groundwater screening levels, or Table 915-1 groundwater and WQCC Regulation 41 numeric and narrative levels as applicable to site conditions. The Scope of Work included installation of temporary groundwater monitoring holes if groundwater was encountered; however, groundwater was not encountered.

Soil Remediation Summary

☐ In Situ

_____ Bioremediation (or enhanced bioremediation)
_____ Chemical oxidation
_____ Air sparge / Soil vapor extraction
_____ Natural Attenuation
_____ Other _____

☐ Ex Situ

_____ Excavate and offsite disposal
_____ If Yes: Estimated Volume (Cubic Yards) _____
_____ Name of Licensed Disposal Facility or ECMC Facility ID # _____
_____ Excavate and onsite remediation
_____ Land Treatment
_____ Bioremediation (or enhanced bioremediation)
_____ Chemical oxidation
_____ Other _____

Groundwater Remediation Summary

_____ Bioremediation (or enhanced bioremediation)
_____ Chemical oxidation
_____ Air sparge / Soil vapor extraction
_____ Natural Attenuation
_____ Other _____

GROUNDWATER MONITORING

If groundwater has been impacted, describe proposed monitoring plan, including # of wells or sample points, monitoring schedule, analytical methods, points of compliance. Attach a groundwater monitoring location diagram.

REMEDIATION PROGRESS UPDATE

PERIODIC REPORTING

Approved Reporting Schedule:

☒ Quarterly☐ Semi-Annually☐ Annually☐ Other

Quarterly groundwater monitoring - under a separate scope of work

☐ Request Alternative Reporting Schedule:

☐ Semi-Annually☒ Annually☐ Other

Request Annual Reporting. Groundwater was not encountered. Monitoring wells were not installed.

Rule 913.e:

After initial approval of a Form 27, the Operator will provide quarterly update reports in a Supplemental Form 27 to document progress of site investigation and remediation, unless an alternative reporting schedule has been requested by the Operator and approved by the Director. The Director may request a more frequent reporting schedule based on site-specific conditions.

Report Type:

☐ Groundwater Monitoring☐ Land Treatment Progress Report☐ O&M Report☐ Other _____

Adequacy of Operator's General Liability Insurance and Financial Assurance

Describe the adequacy of the Operator's general liability insurance and Financial Assurance to fully address the anticipated costs of Remediation, including the estimated remaining cost for this project (below).

If this information has been provided on a Form 27 within the last 12 months, provide the Document Number of that form.

The former PEASE OIL & GAS COMPANY - 68050 WHITTIER "A" Pit is in the Colorado ECMC Orphaned Well Program. The former Operator's bond, or other funding will be used to investigate, remediate, and reclaim the orphaned oil and gas location.

Operator anticipates the remaining cost for this project to be: \$ _____

WASTE DISPOSAL INFORMATION

Was E&P waste generated as part of this remediation? _____

Describe beneficial use, if any, of E&P Waste derived from this remediation project:

Volume of E&P Waste (solid) in cubic yards _____

E&P waste (solid) description _____

ECMC Disposal Facility ID #, if applicable: _____

Non-ECMC Disposal Facility: _____

Volume of E&P Waste (liquid) in barrels _____

E&P waste (liquid) description _____

ECMC Disposal Facility ID #, if applicable: _____

Non-ECMC Disposal Facility: _____

REMEDIATION COMPLETION REPORT

REMEDIATION COMPLETION SUMMARY

Is this a Final Closure Request for this Remediation Project? No _____

If YES:

☐ Compliant with Rule 913.h.(1).

☐ Compliant with Rule 913.h.(2).

☐ Compliant with Rule 913.h.(3).

Do all soils meet Table 915-1 standards? _____

Does the previous reply indicate consideration of background concentrations? _____

Does Groundwater meet Table 915-1 standards? _____

Is additional groundwater monitoring to be conducted? _____

Operator shall comply with the ECMC 1000-Series Reclamation Requirements for all impacted and disturbed areas.

RECLAMATION PLAN

RECLAMATION PLANNING

Describe reclamation plan. Discuss existing and new grade recontouring; method and testing of compaction alleviation; and reseeding program, including location of new seed, seed mix and noxious weed prevention. Attach diagram or drawing.

The Colorado ECMC OWP will reclaim this oil and gas location in accordance with 1000 Series Rules including grading/recontouring of disturbed areas. The reclamation plan will include development of a reseeding program in consultation with the surface owner, tenant farmer, and Timka Resources that describes preparation of a new seed bed, seed mix, and noxious weed prevention within the drainage swale. This will be performed under a separate scope of work. Final reclamation will be conducted per ECMC 1000 Series Rules and prioritized based on OWP ranking, project funding, and staff availability. The reclamation scope will include a plan to address and avoid any effect on reclamation from Table 915-1 inorganic and soil suitability for reclamation parameters.

Is the described reclamation complete? _____

Does the reclamation described herein constitute interim or final reclamation of the Oil and Gas Location?

☐ Interim

☐ Final

Did the Surface Owner provide the seed mix? _____

If YES, does the seed mix comply with local soil conservation district recommendations? _____

Did the local soil conservation district provide the seed mix? _____

SITE RECLAMATION DATES

Proposed date of commencement of Reclamation. _____

Proposed date of completion of Reclamation. _____

IMPLEMENTATION SCHEDULE

Per Rule 913.d.(2): Any change from the approved implementation schedule will be requested at least 14 days in advance, and the Operator may not make the change without the Director's approval.

PRIOR DATES

Date of Surface Owner notification/consultation, if required. 02/22/2024

Actual Spill or Release date, or date of discovery. 06/28/1989

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 04/08/2024

Proposed site investigation commencement. 04/17/2024

Proposed completion of site investigation. 04/18/2024

REMEDIAL ACTION DATES

Proposed start date of Remediation. _____

Proposed date of completion of Remediation. _____

Per Rule 913.d.(2): Any change from the approved implementation schedule will be requested at least 14 days in advance, and the Operator may not make the change without the Director's approval.

☐ Change from approved implementation schedule per Rule 913.d.(2).

Basis for change in implementation schedule:

OPERATOR COMMENT

The former PEASE OIL & GAS COMPANY - 68050 WHITTIER #3 oil and gas well (API #05-075-06443) was plugged and abandoned on 04/16/1997. The related WHITTIER-69N53W 21NWN (Location ID #388480) and pit (Pit #116299) are in the ECMC Orphaned Well Program ("OWP"). This supplemental Form 27 presents the results of a subsurface investigation conducted in April 2024 to assess impacts resulting from produced water pit discharges to an adjacent drainage swale west-northwest of the site. The site is located approximately 6000 feet south of Sterling Reservoir. The skim pit (15'x15') and produced water pit (75'x100') were reportedly unlined and had a depth of 5 ft bgs. The site is underlain by the Cretaceous age Pierre Shale (Kp) mantled by a thin layer of Quaternary age eolian deposits to the east. The pit appears to be mis-plotted and is actually located south of where it plots, southeast of the drainage swale, and north of the active Timka Resources Ltd tank battery (Location ID #312206) based on a review of aerial photographs. A total of 12 soil borings were advanced to a maximum depth of 10 feet bgs and 26 soil samples were submitted for laboratory analysis of Table 915-1 parameters including two site-specific background soil samples, BKG01 and BKG02, collected from 0 to 3 feet bgs in undisturbed upgradient areas northeast and southeast of the pit and swale. Groundwater was not encountered in any of the soil borings. Based on a review of Division of Water Resources water well records, groundwater ranges from 120 feet bgs to 280 feet bgs. Organic parameters were not detected. Inorganic parameters including metals (arsenic, barium, lead, nickel, and selenium) and soil suitability for reclamation were reported above Table 915-1 SSL. The OWP requests to use the Table 915-1 residential SSL and site-specific background levels. Site investigation and remediation will proceed under Remediation Project # 34966.

I hereby certify all statements made in this form are to the best of my knowledge true, correct, and complete.

Signed: James Hix

Title: East OWP EPS

Submit Date: 08/26/2024

Email: james.hix@state.co.us

Based on the information provided herein, this Application for Site Investigation and Remediation Workplan complies with ECMC Rules and applicable orders and is hereby approved.

ECMC Approved: Krystal Heibel

Date: 10/21/2024

Remediation Project Number: 34966

COA Type

Description

	Arsenic concentrations in confirmation soil samples exceed the Table 915-1 Residential Soil Screening Level Concentrations and are greater than 1.25 times the arsenic concentration in the background sample. OWP will provide additional data to characterize arsenic concentrations at the site and to determine its source in the next quarterly report.
	OWP will collect and submit for laboratory analysis a soil sample collected from the areas most likely to have been impacted during the operational life of the flowline. These areas include, but are not limited to: where Flowlines connect to the wellhead, surface equipment, risers, valves, or manifolds; where Flowlines bend or were repaired in the past and at joints and hammer unions; where Flowlines connect to Flowlines or equipment of different material; and where Flowlines crossed drainages or surface water or are in contact with shallow groundwater.

2 COAs

ATTACHMENT LIST

Upon approval, the approved Form 27 and all listed attachments will be indexed to the Remediation Project file. Only the approved Form 27 will also be indexed to the related Facilities.

Att Doc Num

Name

403900753	INVESTIGATION/REMEDIATION WORKPLAN (SUPPLEMENTAL)
403900815	SITE INVESTIGATION REPORT
403964621	FORM 27-SUPPLEMENTAL-SUBMITTED

Total Attach: 3 Files

General Comments

User Group

Comment

Comment Date

		Stamp Upon Approval
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Total: 0 comment(s)